

Claims:

1. A multifunction semiconductor storage device capable of hot plug and play and being removable connected to the host system through the general purpose interface, including a semiconductor storage media module (1) and a controller module (2), wherein the controller module (2) comprises a general purpose interface control module (21), a microprocessor and control module (22), said semiconductor storage device can realize the device class protocol of the floppy disk drive, simulate and implement the storing function of the floppy diskette working on the floppy disk drive, or realize the device class protocol of the CD-ROM drive, simulate and implement the storing function of the CD-ROM working on the CD-ROM drive, or realize the device class protocol of the ZIP disk, simulate and implement the storing function of the ZIP disk, or realize the device class protocol of the MO disk, simulate and implement the storing function of the MO disk.

2. A multifunction semiconductor storage device as claimed in claim 1, wherein the semiconductor storage media module (1) corresponds to a storage space or can be divided into at least two storage spaces.

3. A multifunction semiconductor storage device as claimed in claim 1, wherein it can be recognized, controlled and accessed by the BIOS (Basic Input and Output System) of the host computer, the semiconductor storage media module (1) stores the boot up program of the operating system and operating system programs, while the BIOS of the host computer is powered up, the boot up program of the operating system and operating system programs are loaded from the semiconductor storage media module (1) so as to boot the host computer.

4. A multifunction semiconductor storage device as claimed in claim 1, wherein the driver programs of the semiconductor storage device can be stored in the semiconductor storage media module (1) so as to realize the function of storing the driver program in itself.

5. A multifunction semiconductor storage device as claimed in claim 1, wherein further includes a write protect switch (3) capable of offering physical protection to

said semiconductor storage media module (1) so as to prevent the contents from being overwritten or erased, said write protect switch (3) is electrically connected to said microprocessor and control module (22).

6. A multifunction semiconductor storage device as claimed in claim 1, wherein
5 further includes a LED indicator (5) comprising one or a plurality of indicator devices which can show the status of the semiconductor storage device, said LED power indicator (5) is electrically connected to the microprocessor and control module (22) electrically.

7. A multifunction semiconductor storage device as claimed in claim 1, wherein
10 said controller module (2) further includes a buffer module (23), said buffer module (23) is a static random access memory (SRAM) and is electrically connected to the microprocessor and control module (22).

8. A multifunction semiconductor storage device as claimed in claim 1, wherein said semiconductor storage media module (1) has a buffer area.

9. A multifunction semiconductor storage device as claimed in claim 1, wherein
15 said semiconductor storage media module (1) has a special information area for storing the information relevant to said semiconductor storage device, the password and the digital signature of the user.

10. A multifunction semiconductor storage device as claimed in claim 2,
20 wherein each of the storage spaces of said semiconductor storage media module (1) corresponds to a storage disk.

11. A multifunction semiconductor storage device as claimed in claim 10,
wherein said storage disk can be a simulated floppy disk drive and floppy diskette, a simulated CD-ROM drive and a CD-ROM, a simulated hard disk, a simulate ZIP
25 disk, a simulated MO disk, or a customized storage disk.

12. A multifunction semiconductor storage device as claimed in claim 10,
wherein further includes a storage disk selection switch (4) for selecting at least one storage disk from all storage disks, so that the selected storage disk can be recognized, controlled and accessed by the host computer.

13. A multifunction semiconductor storage device as claimed in claim 10,

wherein said storage disk supports the device class protocols such as UFI (USB Floppy Interface) protocol, SFF8020I protocol, SFF8070I protocol, SCSI Transparent Command Set protocol, Reduced Block Commands (RBC) T10 Project1240-D protocol, ZIP disk protocol and MO disk protocol.

5 14. A multifunction semiconductor storage device as claimed in claim 10, wherein each of the storage disks can be divided into smaller storage spaces including the data area and the special information area, the special information contained in said special information area includes information related to the storage disk, the password and the digital signature of the user.

10 15. A method for booting up computer using the multifunction semiconductor storage device, comprising the steps of:

storing the boot program of the operating system and operating system programs into the multifunction semiconductor storage device;

15 connecting the multifunction semiconductor storage device with the computer host system through the general-purpose interface;

identifying the general purpose interface, and controlling and reading/writing the multifunction semiconductor storage device based on BIOS after powered up the computer host system; and

20 loading the boot program of the operating system and operating system programs stored in the multifunction semiconductor storage device to computer host system for achieving computer boot-up.